Appendix A

1996 Environmental Monitoring Program

The WVDP Supports a Bluebird and Wood Duck Nesting-box Program Sponsored by the Springville Field and Stream Club

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1996 Environmental Monitoring Program

The following schedule represents the West Valley Demonstration Project (WVDP) routine environmental monitoring program for 1996. This schedule met or exceeded the minimum program specifications needed to satisfy the requirements of DOE Order 5400.1. It also met requirements of DOE 5400.5 and DOE/EH-0173T. Specific methods and recommended monitoring program elements are found in DOE/EP-0096, *Effluent Monitoring*, and DOE/EP-0023, *Environmental Surveillance*, which were the bases for selecting most of the schedule specifics. Additional monitoring was mandated by operational safety requirements (OSRs) and air and water discharge permits (40 CFR 61 and SPDES), which also required formal reports. (OSRs applicable to the monitoring program were cancelled in March 1996.) Specifics are identified in the schedule under Monitoring/Reporting Requirements.

Results from all locations except groundwater monitoring points are summarized in Quarterly Environmental Monitoring Data Reports (QEMDRs). Groundwater monitoring data are summarized in quarterly groundwater monitoring reports. A computerized environmental data-screening system identifies analytical data that exceed pre-set limits. All locations are checked monthly for trends or noticeable results in accordance with criteria established in Documentation and Reporting of Environmental Monitoring Data (West Valley Nuclear Services Co., Inc. April 13, 1995). Reportable results are then described in the Monthly Trend Analysis Report (MTAR) together with possible causes and corrective actions, if indicated. A WVDP Effluent Summary Report (ESR) is transmitted with each MTAR.

Schedule of Environmental Sampling

The following table is a schedule of environmental sampling at the WVDP. Locations of the sampling points are shown in Figures A-1 through A-9. The index on pp. A-v through A-vii is a list of the codes for various sample locations. Table headings in the schedule are as follows:

- ***Sample Location Code.*** Describes the physical location where the sample is collected. The code consists of seven or eight characters: The first character identifies the sample medium as **A**ir, **W**ater, **S**oil/**S**ediment, **B**iological, or **D**irect Measurement. The second character specifics o**N**-site or o**F**f-site. The remaining characters describe the specific location (e.g., **AFGRVAL** is **A**ir o**F**f-site at **GR**eat **VAL**ley).

- ***Monitoring/Reporting Requirements.*** Notes the bases for monitoring that location, any additional references to permits or OSRs, and the reports generated from sample data. Routine reports cited in Appendix A are the Effluent Summary Report (ESR), the Monthly Trend Analysis Report (MTAR), the Quarterly Environmental Monitoring Data Report (QEMDR), the On-site Discharge Information System (ODIS) report, the Air Emissions Report (NESHAP), and the annual Site Environmental Report (SER).

- ***Sampling Type/Medium.*** Describes the collection method and the physical characteristics of the medium.

- ***Collection Frequency***. Indicates how often the samples are collected or retrieved.

- ***Total Annual Sample Collections***. Specifies the number of discrete physical samples collected annually for each group of analytes.

- ***Analyses Performed/Composite Frequency.*** Notes the type of analyses of the samples taken at each collection, the frequency of composite, and the analytes determined for the composite samples.

Summary of Monitoring Program Changes for 1996

Location Code	*Description of Changes*
Groundwater Monitoring Points	Program reviewed and sampling frequency and analytes tailored to address site-wide monitoring parameters as well as constituents of concern specific to SSWMUs. Number of monitoring points reduced; parameter lists at remaining wells streamlined.
ANVITSK **ANSEISK**	Vitrification heating, ventilation, and air conditioning stack sampler and seismic sampler brought on-line November 1995. The vitrification system began radioactive operations with the first transfer of high-level waste in June 1996 followed by the beginning of vitrification in July 1996.
ANCSPFK	Air sampler added at container sorting and packaging facility ventilation point.

Index of Environmental Monitoring Program Sample Points

Air Effluent and On-site Ambient Air (Fig. A-1)

Liquid Effluent and On-site Water (Fig. A-2)

** Not detailed on map*

Index of Environmental Monitoring Program Sample Points
(continued)

On-site Groundwater and Seeps (Fig. A-3)

Off-site Surface Water (Fig. A-4)

Off-site Drinking Water (Figs. A-5 and A-9)

Off-site Ambient Air (Figs. A-6 and A-9)

** Not detailed on map*

Index of Environmental Monitoring Program Sample Points
(concluded)

Fallout, Sediment, and Soil (Figs. A-2, A-4, A-6, and A-9)

Off-site Biological (Figs. A-5 and A-9)

Direct Measurement Dosimetry (Figs. A-7, A-8, and A-9)

1996 Monitoring Program
On-site Effluent Monitoring:

Air Effluents

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
ANSTACK Main Plant Ventilation Exhaust Stack	Airborne radioactive effluent points including LWTS and vitrification off-gas	Continuous off-line air particulate monitors	→ Continuous measurement of fixed filter, replaced weekly	→ N/A	→ Real-time alpha and beta monitoring
ANSTSTK Supernatant Treatment System (STS) Ventilation Exhaust	Required by: • OSR-GP-1 • 40 CFR 61	Continuous off-line air particulate filters	→ Weekly	→ 52 each location	→ Gross alpha/beta, gamma isotopic*
				Weekly filters composited to 4 each location	→ Quarterly composite for Sr-90, Pu/U isotopic, total U, Am-241, gamma isotopic
ANCSSTK O1-14 Building Ventilation Exhaust	Reported in: • ESR • MTAR • QEMDR • ODIS • SER • Air Emissions Annual Report (NESHAP)	Continuous off-line desiccant columns for water vapor collection	→ Weekly	→ 52 each of two locations	→ H-3 (**ANSTACK** and **ANSTSTK** only)
ANCSRFK Contact Size-reduction Facility Exhaust		Continuous off-line charcoal cartridges	→ Weekly	→ Weekly cartridges composited to 4 each location	→ Quarterly composite for I-129
ANCSPFK Container Sorting and Packaging Facility					
ANVITSK Vitrification HVAC Exhaust					
ANSEISK Seismic Sampler, Vitrification Backup	Airborne radioactive effluent point Required by: • OSR-GP-1 • 40 CFR 61 Reported in: • ESR • MTAR • QEMDR • ODIS • SER • Air Emissions Annual Report (NESHAP)	Continuous off-line air particulate filter	→ Weekly	→ 52	→ Filters for gross alpha/beta, gamma isotopic* upon collection

* Weekly gamma isotopic only if gross activity rises significantly.

Sampling Rationale

ANSTACK DOE/EH-0173T, 3.0; OSR-GP-1, 1.A, 2.B; and DOE/EP-0096, 3.3.

Monitors and samples HEPA-filtered ventilation from most process areas, including cell ventilation, vessel off-gas, FRS and head end ventilation, analytical area. Requires continuous effluent monitoring per Subpart H, Section 61.93(b) because potential emissions may exceed 0.1 mrem limit.

ANSTSTK DOE/EH-0173T, 3.0; OSR-GP-1, 1.B, 2.B; and DOE/EP-0096, 3.3.

Monitors and samples HEPA-filtered ventilation from building areas involved in treatment of high-level waste supernatant. Requires continuous effluent monitoring per Subpart H, Section 61.93(b) because potential emissions may exceed 0.1 mrem limit.

ANCSSTK DOE/EH-0173T, 3.0; OSR-GP-1, 1.B, 2.B; and DOE/EP-0096, 3.3.

Monitors and samples HEPA-filtered ventilation from 01-14 building, which houses equipment used to treat ceramic melter off-gas. Requires continuous effluent monitoring per Subpart H, Section 61.93(b) because potential emissions may exceed 0.1 mrem limit.

ANCSRFK DOE/EH-0173T, 3.0; OSR-GP-1, 1.B, 2.B; and DOE/EP-0096, 3.3.

Monitors and samples HEPA-filtered ventilation from process area where radioactive tanks, pipes, and other equipment are reduced in volume by cutting with a plasma torch.

ANCSPFK DOE/EH-0173T, 3.0; DOE/EP-0096, 3.3.

Monitors and samples ventilation from lag storage area 4, the container sorting and packaging facility.

ANVITSK DOE/EH-0173T, 3.0; OSR-GP-1; DOE/EP-0096, 3.3.

Vitrification facility heating, ventilation, and air conditioning effluent exhaust stack. Sampler brought on-line in late 1995 when nonradioactive operations began. Radioactive operation began with first high-level waste transfer in June 1996 and vitrification startup in July 1996. Interim approval; permit pending.

ANSEISK DOE/EH-0173T, 3.0; OSR-GP-1; and DOE/EP-0096, 3.3.

Vitrification system back-up filter for catastrophic event monitoring in case of primary vitrification HVAC stack failure.

■ Sampling locations are shown on Figure A-1 (p. A-45).

1996 Monitoring Program
On-site Effluent Monitoring:

Air Effluents

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
ANSUPCV Supercompactor Exhaust	Airborne radioactive effluent point Required by: • OSR-GP-1 • 40 CFR 61 Reported in: • ESR • MTAR • QEMDR • ODIS • SER • Air Emissions Annual Report (NESHAP)	Continuous off-line air particulate monitor during operation	Continuous measurement of fixed filter	N/A	Real-time beta monitoring
		Continuous off-line air particulate filter	Weekly (when operating)	52 maximum	Filters for gross alpha/beta, gamma isotopic* upon collection
				Collected filters composited to 4	Quarterly composites for Sr-90, Pu/U isotopic, total U, Am-241, gamma isotopic
OVEs/PVUs Outdoor Ventilated Enclosures/ Portable Ventilation Units	Airborne radioactive effluent points Required by: • OSR-GP-1 • 40 CFR 61 Reported in: • ESR • MTAR • QEMDR • ODIS • Air Emissions Annual Report (NESHAP)	Continuous off-line air particulate filter	As required	1 each location	Filters for gross alpha/beta, gamma isotopic* upon collection
				Collected filters** composited to 4	Quarterly composites for Sr-90, Pu/U isotopic, total U, Am-241, gamma isotopic

* Gamma isotopic only if gross activity rises significantly.

** If gross determination of individual filter is significantly higher than background, individual sample would be submitted immediately for isotopic analysis.

Sampling Rationale

ANSUPCV	DOE/EH-0173T, 3.0; OSR-GP-1, 1.B, 2.B; and DOE/EP-0096, 3.3. Monitors and samples HEPA-filtered ventilation from area where low-level radioactive waste volume is reduced by compaction.
OVEs/PVUs	DOE/EH-0173T, 3.0; OSR-GP-1, 1.B, 2.B; and DOE/EP-0096, 3.3. Outdoor ventilated enclosures; portable ventilation units used for handling of radioactive materials or for decontamination in areas without containment ventilation.

- Sampling locations are shown on Figure A-1 (p. A-45).

1996 Monitoring Program
Environmental Surveillance:

Air Effluents and On-site Ambient Air

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
ANLLWTVC Low-level Waste Treatment and Ventilation, "cold" side **ANLLWTVH** Low-level Waste Treatment and Ventilation, "hot" side **ANLAUNV** Laundry Change Room Ventilation	Airborne radioactive effluent point Required by: • 40 CFR 61 Reported in: • ESR • MTAR • QEMDR • ODIS • SER • Air Emissions Annual Report (NESHAP)	Continuous off-line air particulate filter	→ Weekly (monthly at ANLAUNV)	→ 52 each location (12 at ANLAUNV)	→ Gross alpha/beta, gamma isotopic* upon collection
ANLAGAM Lag Storage Area Ambient Air **ANNDAAM** NDA Area Ambient Air	Ambient "diffuse source" air emissions Reported in: • MTAR • QEMDR • SER	Continuous air particulate filter	→ Weekly	→ 52 each location	→ Gross alpha/beta
				Weekly filter composited to 4 each location	→ Quarterly composite for Sr-90, gamma isotopic, Pu/U isotopic, total U, Am-241
ANSDAT9** SDA Trench 9 Ambient Air	Ambient "diffuse source" air emissions Reported in: • Quarterly reports to NYSDEC • MTAR • QEMDR • SER	Continuous air particulate filter	→ Weekly	→ 52	→ Gross alpha/beta
				Weekly filter composited to 4	→ Quarterly composite for gamma isotopic
		Continuous off-line desiccant columns for water vapor collection	→ Weekly	→ 52	→ H-3
		Continuous off-line charcoal cartridges	→ Monthly	→ Monthly cartridges composited to 4	→ Quarterly composite for I-129

* Gamma isotopic only if gross activity rises significantly.

** Sampling frequency and analytical parameters as directed by NYSERDA.

Sampling Rationale

ANLLWTVC DOE/EH-0173T, 3.0; and DOE/EP-0096, 3.3.
ANLLWTVH

Samples nonradioaactive and radioactive sides of ventilation exhaust from low-level waste treatment facility.

ANLAUNV DOE/EH-0173T, 3.0; and DOE/EP-0096, 3.3.

Samples ventilation from contaminated clothing laundry.

ANLAGAM DOE/EH-0173T, 3.3.2.

Monitors ambient air in the lag storage area, a possible "diffuse source" of air emissions.

ANNDAAM DOE/EH-0173T, 3.3.2.

Monitors ambient air in NDA area, a possible "diffuse source" of air emissions.

ANSDAT9 DOE/EH-0173T, 3.3.2.

Monitors ambient air by SDA trench 9, a possible "diffuse source" of air emissions. WVDP support of NYSERDA.

- Sampling locations are shown on Figure A-1 (p. A-45).

1996 Monitoring Program
On-site Effluent Monitoring:

Liquid Effluents

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
WNSP001 Lagoon 3 Discharge Weir	Primary point of liquid effluent batch release	Grab liquid	Daily, during lagoon 3 discharge*	40-80	Daily for gross beta, conductivity, flow
	<u>Required by</u>: • OSR-GP-2 • SPDES Permit			7-12	Every 6 days a sample is analyzed for gross alpha/beta, H-3, Sr-90, gamma isotopic
	<u>Reported in</u>: • Monthly SPDES DMR • ESR • MTAR • QEMDR • ODIS • SER			Composite of daily samples for each discharge, 4-8	Weighted composite for gross alpha/beta, H-3, C-14, Tc-99, Sr-90, I-129, gamma isotopic, Pu/U isotopic, total U, Am-241 for each month of discharge
		Composite liquid	Twice during discharge, near start and near end	8-16	Two 24-hour composites for BOD-5, suspended solids, SO_4, NO_3, NO_2, NH_3, total Al, Fe, and Mn, total recoverable Cd, Cr, Cu, Ni, Pb and Zn, dissolved As and Cu, dissolved sulfide
		Grab liquid	Twice during discharge, near start and near end	8-16	Settleable solids, total dissolved solids, pH, cyanide amenable to chlorination, oil & grease, surfactant (as LAS), total recoverable Co, Cr^{+6}, Se, and V, dichlorodifluoromethane, trichlorofluoromethane, 3,3-dichlorobenzidine, tributyl phosphate, hexachlorobenzene, alpha-BHC, heptachlor, xylene, 2-butanone
		Composite liquid	Semiannual	2	A 24-hour composite for titanium
		Composite liquid	Annual	1	A 24-hour composite for Ba and Sb
		Grab liquid	Semiannual	2	Bis(2-ethylhexyl) phthalate, 4-dodecene
		Grab liquid	Annual	1	Chloroform

* Lagoon 3 is discharged between four and eight times per year, as necessary, averaging ten days per discharge.

Sampling Rationale

WNSP001 DOE 5400.5 and DOE/EH-0173T, 2.3.3.

By DOE Order all liquid effluent streams from DOE facilities shall be evaluated and their potential for release of radionuclides addressed.

New York State SPDES permit no. NY0000973.

These regulations are met for radiological parameters by daily grab sampling during periods of lagoon 3 discharge. Sampling for chemical constituents is performed near the beginning and end of each discharge period to meet the site SPDES permit. Both grab samples and 24-hour composite samples are collected.

- Sampling location is shown on Figure A-2 (p. A-46).

1996 Monitoring Program
On-site Effluent Monitoring:

Liquid Effluents

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
WNSP006 Frank's Creek at Security Fence	Combined facility liquid discharge Required by: • OSR-GP-2 Reported in: • MTAR • QEMDR • SER	Timed continuous composite liquid	→ Weekly	→ 52	→ Gross alpha/beta, H-3, pH, conductivity
				Weekly samples composited to 12	→ Monthly composite for gamma isotopic and Sr-90 (monthly composite shared with NYSDOH)
				Weekly samples composited to 4	→ Quarterly composite for C-14, I-129, Pu/U isotopic, total U, Am-241, Tc-99
		Grab liquid	→ Semiannual	→ 2	→ NPOC, TOX, Ca, Mg, Na, K, Ba, Mn, Fe, Cl, SO_4, NO_3+NO_2-N, F, HCO_3, CO_3
WNSP007 Sanitary Waste Discharge	Liquid effluent point for sanitary and utility plant combined discharge Required by: • SPDES Permit Reported in: • Monthly SPDES DMR • ESR • MTAR • QEMDR • ODIS • SER	24-hour composite liquid	→ 3 each month	→ 36	→ Gross alpha/beta, H-3, pH, suspended solids, NH_3, NO_2-N, BOD-5, total Fe
				Monthly samples composited to 4 quarterly samples	→ Gamma isotopic
		Grab liquid	→ 3 each month	→ 36	→ Oil & grease
		Grab liquid	→ Weekly	→ 52	→ pH, settleable solids, total residual chlorine
		Grab liquid	→ Annual	→ 1	→ Chloroform
WNSDADR SDA Run-off	Surface water run-off from south portion of SDA Required by: • Interim Measures Compliance Reported in: • Quarterly reports to NYSDEC • MTAR • QEMDR • SER	Grab liquid	→ Monthly	→ 12	→ pH, total suspended solids, oil & grease, flow, gross alpha/beta, H-3, gamma isotopic

Sampling Rationale

WNSP006 DOE/EH-0173T, 5.10.1.1.

By DOE Order all liquid effluent streams from DOE facilities shall be evaluated and their potential for release of radionuclides addressed.

In accordance with WVDP SPDES permit no. NY0000973, outfall 116 (pseudo-monitoring point) uses flow data from WNSP006. Flow augmentation parameters (flow and total dissolved solids [TDS] are monitored at location WNSP006; calculated TDS and flow data related to sample point WNSP006 are reported for pseudo-monitoring point 116 in the monthly SPDES Discharge Monitoring Report (DMR).

WNSP007 DOE 5400.5 and DOE/EH-0173T, 2.3.3.

Sampling rationale is based on New York State SPDES permit no. NY0000973 and DOE 5400.5 criteria for discharge of radioactivity to and from the sewage treatment plant.

WNSDADR NYSERDA interim measures compliance.

WVDP support of NYSERDA.

Grab sample monitoring surface water runoff from south portion of SDA.

- Sampling locations are shown on Figure A-2 (p. A-46).

1996 Monitoring Program
Environmental Surveillance:

On-site Surface Water

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
WNSWAMP NE Swamp Drainage	Site surface drainage Reported in: • ESR • MTAR • QEMDR • ODIS • SER	Timed continuous composite liquid	→ Weekly	→ 52	→ Gross alpha/beta, H-3, pH, conductivity
				Weekly samples composited to 12	→ Monthly composite for gamma isotopic and Sr-90 (monthly composite shared with NYSDOH)
				Weekly samples composited to 4	→ Quarterly composite for C-14, I-129, Pu/U isotopic, total U, Am-241
		Grab liquid	→ Semiannual	→ 2	→ NPOC, TOX, Ca, Mg, Na, K, Ba, Mn, Fe, Cl, SO_4, NO_3+NO_2-N, F, HCO_3, CO_3
WNSW74A North Swamp Drainage	Site surface drainage Reported in: • ESR • MTAR • QEMDR • ODIS • SER	Timed continuous composite liquid	→ Weekly	→ 52	→ Gross alpha/beta, H-3, pH, conductivity
				Weekly samples composited to 12	→ Monthly composite for gamma isotopic, Sr-90
				Weekly samples composited to 4	→ Quarterly composite for C-14, I-129, Pu/U isotopic, total U, Am-241
		Grab liquid	→ Semiannual	→ 2	→ NPOC, TOX, Ca, Mg, Na, K, Ba, Mn, Fe, Cl, SO_4, NO_3+NO_2-N, F, HCO_3, CO_3
WN8D1DR High-level Waste Farm Underdrain	Drains subsurface water from HLW storage tank area Reported in: • MTAR	Grab liquid	→ Weekly	→ 52	→ Gross alpha/beta, H-3, pH
				Weekly samples composited to 12	→ Monthly composite for gamma isotopic, Sr-90

Sampling Rationale

WNSWAMP DOE/EH-0173T, 5.10.1.1.

NE site surface water drainage; provides for the sampling of this discrete drainage path for uncontrolled surface waters just before they leave the site's controlled boundary. Waters represent surface and subsurface drainages from the construction and demolition debris landfill (CDDL), old hardstand areas, and other possible north plateau sources of radiological or nonradiological contamination.

WNSW74A DOE/EH-0173T, 5.10.1.1.

N site surface water drainage; provides for the sampling of this discrete drainage path for uncontrolled surface waters just before they leave the site's controlled boundary. Waters represent surface and subsurface drainages from lag storage areas and other possible north plateau sources of radiological or nonradiological contamination.

WN8D1DR DOE/EH-0173T, 5.10.1.3.

Monitors the potential influence on subsurface drainage surrounding the high-level waste tank farm.

- Sampling locations are shown on Figure A-2 (p. A-46).

1996 Monitoring Program
Environmental Surveillance:

On-site Surface Water

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
WNSP008 French Drain	Drains subsurface water from LLWTF lagoon area Required by: • SPDES Permit Reported in: • Monthly SPDES DMR • ESR • MTAR • QEMDR • ODIS • SER	Grab liquid	→ Monthly	→ 12	→ Gross alpha/beta, H-3
		Grab liquid	→ 3 each month	→ 36	→ Conductivity, pH, BOD-5, total Fe, total recoverable Cd and Pb
		Grab liquid	→ Annual	→ 1	→ As, Cr, total Ag and Zn
WNSP005 Facility Yard Drainage	Combined drainage from facility yard area Reported in: • MTAR • QEMDR • SER	Grab liquid	→ Monthly	→ 12	→ Gross alpha/beta, H-3, pH
WNCOOLW Cooling Tower Basin	Cools plant utility steam system water Reported in: • MTAR • QEMDR • SER	Grab liquid	→ Monthly	→ 12	→ Gross alpha/beta, H-3, pH
				Monthly samples composited to 4	→ Quarterly composite for gamma isotopic

Sampling Rationale

WNSP008 DOE/EH-0173T, 5.10.1.3.

French drain of subsurface water from lagoon (LLWTF) area. NYSDEC SPDES permit no. NY0000973 also provides for the sampling of this discrete drainage path for uncontrolled subsurface waters before they flow into Erdman Brook. Waters represent subsurface drainages from downward infiltration around the LLWTF and lagoon systems. This point would also monitor any subsurface spillover from the overfilling of lagoons 2 and 3. Sampling of significance for both radiological and nonradiological contamination.

This site is also monitored as part of the groundwater program. (See SSWMU #1.)

WNSP005 Facility yard surface water drainage; generally in accordance with DOE/EH-0173T, 5.10.1.1. Previously in accordance with NYSDEC SPDES permit no. NY0000973.

Provides for the sampling of this discrete drainage path for uncontrolled surface waters just after outfall 007 discharge into the drainage and before they flow to Erdman Brook. Waters represent surface and subsurface drainages primarily from the main plant yard area. Historically this point was used to monitor sludge pond(s) and utility room discharges to the drainage. These two sources have been rerouted. Migration of residual site contamination around the main plant dictates surveillance of this point primarily for radiological parameters.

WNCOOLW Facility cooling tower circulation water; generally in accordance with DOE/EH-0173T, 5.10.1.1.

Operational sampling carried out to confirm no migration of radiological contamination into the primary coolant loop of the HLWTF and/or plant utility steam systems. Migration from either source might indicate radiological control failure.

■ Sampling locations are shown on Figure A-2 (p. A-46).

1996 Monitoring Program
Environmental Surveillance:

On-site Surface Water

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
WNFRC67* Frank's Creek E of SDA	Drains NYS Low-level Waste Disposal Area Reported in: • Reported to NYSERDA • MTAR • QEMDR • SER	Grab liquid	→ Monthly	→ 12	→ Gross alpha/beta, H-3, pH
WNERB53* Erdman Brook N of Disposal Areas	Drains NYS and WVDP disposal areas Reported in: • Reported to NYSERDA • MTAR • QEMDR • SER	Grab liquid	→ Weekly	→ 52	→ Gross alpha/beta, H-3, pH
WNNDADR Drainage between NDA and SDA	Drains WVDP disposal and storage area Reported in: • MTAR • QEMDR • SER	Timed continuous composite liquid	→ Weekly	→ 52	→ pH
				Weekly samples composited to 12	→ Monthly composite for gross alpha/beta, gamma isotopic, H-3
				Weekly samples composited to 4	→ Quarterly composite for Sr-90, I-129
		Grab liquid	→ Semiannual	→ 2	→ NPOC, TOX
WNDCELD Drainage S of Drum Cell	Drains WVDP storage area Reported in: • MTAR • QEMDR • SER	Grab liquid	→ Monthly	→ 12	→ pH, gross alpha/beta
				Monthly samples composited to 4	→ Quarterly composite for Sr-90, I-129, gamma isotopic, H-3
WNNDATR** NDA Trench Interceptor Project	On-site groundwater interception Reported in: • MTAR • QEMDR • SER	Grab liquid	→ Monthly	→ 12	→ Gross alpha/beta, H-3, gamma isotopic, NPOC, TOX
				Monthly samples composited to 4	→ Quarterly composite for I-129

* Monthly sample collected by NYSDOH
** Coordinated with Waste Management Operations

Sampling Rationale

WNFRC67 DOE/EH-0173T, 5.10.1.1.

Monitors the potential influence of both the SDA and drum cell drainage into Frank's Creek east of the SDA and upstream of the confluence with Erdman Brook.

WNERB53 DOE/EH-0173T, 5.10.1.1.

Monitors the potential influence of the drainages from the SDA and the WVDP disposal area into Erdman Brook upstream of the confluence with Frank's Creek.

WNNDADR DOE/EH-0173T, 5.10.1.1.

Monitors the potential influence of the WVDP storage and disposal area drainage into Lagoon Road Creek upstream from confluence with Erdman Brook.

WNDCELD DOE/EH-0173T, 5.10.1.1.

Monitors potential influence of drum cell drainage into Frank's Creek south of the SDA and upstream of WNFRC67.

WNNDATR DOE Order 5400.1, IV.9.

Monitors groundwater in vicinity of the NDA interceptor trench project. The grab sample is taken directly from the trench collection system.

- Sampling locations are shown on Figure A-2 (p. A-46).

1996 Monitoring Program
Environmental Surveillance:

On-site Surface Water

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
WNSTAW Series On-site standing water ponds not receiving effluent include: **WNSTAW4** Border pond SW of AFRT240 **WNSTAW5** Border pond SW of DFTLD13 **WNSTAW6** Borrow pit NE of Project facilities **WNSTAW9** North reservoir near intake **WNSTAWB** Background pond at Sprague Brook maintenance building	Water within vicinity of plant airborne or water effluent Reported in: • MTAR • QEMDR • SER	Grab liquid	→ Annual	→ 1 each location*	→ Gross alpha/beta, H-3, pH, conductivity, Cl, Fe, Mn, Na, NO_3+NO_2-N, SO_4

* Sampling depends upon on-site ponding conditions during the year.

Sampling Rationale

WNSTAW Series — DOE/EH-0173T, 5.10.1.1.

Monitoring of on- and off-site standing waters at locations listed below. Although none receive effluent directly, the potential for contamination is present except at the background location. Former collecting sites 1, 2, 3, 7, and 8 were deleted from the monitoring program because they were built over or are now dry.

WNSTAW4 Border pond located south of AFRT240. Chosen to be a location for obtaining high potential concentration, based on meteorological data. Perimeter location adjacent to a working farm. Drainage extends through private property and is accessible to public.

WNSTAW5 Border pond located west of Project facilities near the perimeter fence and DFTLD13. Chosen to be a location for obtaining high potential concentration, based on meteorological data. Location is adjacent to private residence and potentially accessible by the general public.

WNSTAW6 Borrow pit northeast of Project facilities just outside of inner security fence. Considered to be the closest standing water to the main plant and high-level waste facilities (in lieu of the availability of WNSTAW1).

WNSTAW9 North reservoir near intake. Chosen to provide data in the event of potentially contaminated site potable water supply. Location is south of main plant facilities.

WNSTAWB Pond located near the Sprague Brook maintenance building. Considered a background location; approximately 14 kilometers north of the WVDP.

- Sampling locations are shown on Figures A-2, A-4, and A-9 (pp. A-46, A-48, and A-53, respectively).

1996 Monitoring Program
Environmental Surveillance:

On-site Potable Water

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
WNDNK Series Site Potable Water includes: **WNDNKMS** Maintenance Shop Drinking Water **WNDNKMP** Main Plant Drinking Water **WNDNKEL** Environmental Laboratory Drinking Water **WNDNKUR** Utility Room (EP-1) Potable Water Storage Tank	Sources of potable water within site perimeter Reported in: • MTAR • QEMDR • SER • also reported to Cattaraugus County	Grab liquid	→ Monthly	→ 12 per location	→ Gross alpha/beta, H-3, pH, conductivity
		Grab liquid	→ Annual*	→ 1	→ As, Ba, Cd, Cr, Hg, Se, fluoride, NO_3

* **WNDNKUR** only. Sample for NO_3 to be collected in March. Pb and Cu also will be sampled at this site based upon Cattaraugus County Health Department guidance.

Sampling Rationale

WNDNK Series	Site drinking water; generally according to DOE/EH-0173T, 5.10.1.2. Potable water sampling carried out to confirm no migration of radiological and/or nonradiological contamination into the site's drinking water supply.
WNDNKMS	Site drinking water; generally according to DOE/EH-0173T, 5.10.1.2. Potable water sampled at the maintenance shop in order to monitor a point that is at an intermediate distance from the point of potable water generation and that is used heavily by site personnel.
WNDNKMP	Site drinking water; generally according to DOE/EH-0173T, 5.10.1.2. Same rationale as WNDNKMS but sampled at the main plant water fountain.
WNDNKEL	Site drinking water; generally according to DOE/EH-0173T, 5.10.1.2. Potable water sampled at the Environmental Laboratory in order to monitor the point farthest away from the point of potable water generation.
WNDNKUR	Site drinking water; generally according to DOE/EH-0173T, 5.10.1.2. Sampled at the utility room potable water storage tank before the site drinking water distribution system. Sample location is entry point EP-1.

- Sampling points are within site facilities and are not detailed on figures.